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ABSTRACT

Good information is essential to making intelligent policy decisions. The availability of information about education in Manitoba is hampered both by the questionable validity of much of the data and by the lack of centralized sources. Without attempting to be exhaustive, this booklet briefly analyzes the types of information available on resources (students, teachers, facilities, money, support services, and materials), processes (curriculum, school-community interaction, authority and decision-making, research, and classroom practices), and results (achievement, economic results, and social results). Areas where relevant information remains unavailable are noted. While the information presented is meant to be illustrative of types of data, a general picture of education in Manitoba emerges. The report concludes that improvements in data collection should be made with an eye toward the immediate usefulness of data in terms of the amount of information to be collected, its availability, and the frequency of its collection. (Author/PGD)

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ED155792

1977 POLICY STUDY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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IN SEARCH OF INFORMATION

A REPORT ON PUBLIC EDUCATION IN MANITOBA

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IN SEARCH OF INFORMATION

A Report On Public Education In Manitoba

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The Department of Education of the Province of Manitoba/The Faculty of Education of Brandon University/The Faculty of Education of the University of Manitoba/The Manitoba Association of Registered Nurses/The Manitoba Association of School Trustees/The Manitoba Teachers' Society/The St. Boniface School Division #4/The St. James School Division #2/The Seven Oaks School Division #10/The Winnipeg School Division #1.

Introduction

The Manitoba Educational Research Council has as its objectives collecting and disseminating existing research and information, encouraging useful research efforts of others, and when necessary, doing research to fill gaps in available knowledge. These objectives have led us to attempt to issue annually a report on a significant issue of educational policy, viewed from the standpoint of research. We hope that these reports will act as a stimulus to informed debate and action on the issued examined, and to more research activity.

This report, the first of the planned annual series, looks at the issue of information in public education. Specifically, the report considers:

—the need for information in policy-making
—the present availability of information
—action which might be taken to broaden and strengthen the information available for policy-making.

The report is directed to decision-makers at all levels — teachers, administrators, trustees, the Department of Education — and to the public. We have tried to avoid jargon and make the report readable. Where explanations may be useful we have provided them in the text. Notes and other technical information are at the end of the report.

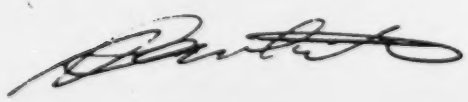
Why have we chosen this issue instead of one of the many others which suggest themselves? The Council believes in the need for open, informed debate about the purpose and operation of the school system. We believe that such a debate should be based on valid information and careful thought. At present this is often not the case. In our opinion, then, there is a need to consider more fully the use of information in policy-making, so that the sort of informed debate we feel is essential can occur. Hence this report which, we believe, rightfully precedes any discussion of specific aspects of education.

Some readers may find the report superficial. In part this is because, in so many areas, information which might allow a fuller discussion is lacking. However we should also point out that the report is not designed as a discussion of the various aspects of education, but as a study of information. We have tried to focus on the availability of information and avoid digressions.

The data which is included in this report is purely illustrative. It is intended to show something of the range of information which exists in Manitoba. We draw few conclusions from it, and we advise the reader to use it with caution.

The report does make recommendations, addressed generally to those concerned with education in Manitoba. The Council will promote discussion of and action on these recommendations in the coming months. If we can resolve together to take steps to improve educational policy-making then the report will have served its purpose.

We welcome comments and discussion of the report. Please feel free to respond.



Roy E. White
President
Manitoba Educational Research Council

Part I — Background

The Pressure for Decisions

Education is under fire, from several directions at once. There is increasing pressure from several sources to alter current practices, but no agreement as to the sorts of changes which should occur. At the same time the complex relationship of schooling to overall social policy has become more evident in the last few years. The major questions about education are still inextricably bound — if not quite in the way once presumed — to decisions about the society people wish to have and ways in which to advance towards it.

There is no need to repeat at length the story of the development of education over the last thirty years, but a brief resume is useful. The consolidation and strengthening of the 1950's was followed by the massive boom of the 60's, as large increases in enrollment and the formulation of an expanded role for schools brought vastly increased expenditures. The general feeling of the decade was that social problems could be solved by increased programming and expenditure; thus such efforts as "The War on Poverty" or "The Just Society." A proliferation of agencies and services emerged dedicated to a variety of good causes. As their share in the struggle, schools were expected to alleviate (if not solve) problems of poverty, race, and class. The historic North American view of schools as aids to social mobility and equality was supplemented by an expectation that they would also function as instruments creating tolerance, fellowship, awareness, and good citizenship. Multiculturalism replaced the melting pot. "Change" and "futuristics" became key words. Schools had their own expansion of programs — various kinds of special education, reduced pupil-teacher ratios, new teacher training programs, many new courses and textbooks, open area, continuous progress, and individualized instruction. Decentralization and community participation were espoused and equal opportunity was enthusiastically supported. Schools were urged to become less elitist institutions. It became very important to keep students in school as long as possible. Whether the changes in school practice matched the rhetoric is, of course, another matter.

While all this was being talked about, critics began to attack the schools for impeding instead of aiding social mobility, for acting as socialization agents and screening systems instead of liberating organizations. It was argued that schools could never fulfill their presumed role as instruments of liberty and equality.

It was also becoming apparent that many new programs were falling short of their ambitious goals. Evaluations indicated that the effects of early compensatory programs, special education programs, and new curricula were minimal. Beginning with Coleman's **Equality of Educational Opportunity** study in 1966, more and more doubt was cast on the effectiveness of schooling. It seemed that schools could do little to affect crucial issues such as poverty. Even the teaching of reading became a problem. Program X showed no difference, method Y failed to increase learning, and pattern Z seemed to have no significant effects on students.

The disenchantment with efforts at reform has created a quandary. The right direction is not clear. There are those who argue that the schools cannot accomplish what they are expected to do and that radical changes in society are needed to alleviate serious social problems.

A second position holds that current reforms are basically sound, but that the experiments of the last decade were never fully or properly implemented. Many changes were not given time enough to show their effect clearly. More resources for further reform over a longer time are necessary before any judgments about the results of various innovations can be made.

There is presently also a push towards a school system with more emphasis on traditional measures of achievement, and less attention to issues of equality. Styled as a return to past practice, this viewpoint is the foundation of the "back to basics" movement.

Decision makers at all levels are caught between these positions. Is more "progressive" change needed? Should existing changes be consolidated, or is a narrower focus for schooling the answer? The debate is made critical, moreover, by declining enrollments and shrinking supplies of money. Whereas at one time there seemed to be enough money to keep all the old programs and to try a variety of new ideas, even the continued financing of existing programs is now in jeopardy. The question of direction is made paramount because fewer options can be supported. Priorities need to be specified so that available resources can be used properly.

We are at a time, then, which requires very difficult decisions. Which programs ought to be deleted? Which innovations should be retained? What kinds of teachers are required? What kinds of facilities and organizational patterns are needed? The questions are many, and they are urgent. Their resolution will require well thought-out decisions.

Information and Policy-Making

Policy-making is a systematic way of coping with issues or problems. The most common model of policy-making includes several steps:

—identification of an issue
—search for alternative approaches
—evaluation of each approach
—choice of best approach as policy

In practice things are rarely so straightforward; steps may be mixed together or omitted entirely. For present purposes, however, this simple description is sufficient.

Making intelligent policy decisions requires a combination of at least two elements: a clear sense of where one is coming from (information) and a clear sense of where one wants to go (direction or goals).

The need for goals for schools is apparent. Goals are the basis for any activity, and the effort to articulate them for schools is being made. Many schools divisions and schools are developing goal statements, sometimes through long processes involving parents and teachers. (It should be said in passing that there are problems with some of these efforts. Because goals are often vague, they are not specified in terms of programs, and little attention is given to implementation.)

While clearly stated goals are very important, the remainder of this report is given to the other side of the policy-making question: information. To say that information is necessary for decision-making is a truism, but the implications of the statement are often overlooked. The sort of information required, and the subjects on which it is needed, are not always evident.

The uses of information can be made clearer by considering the role of information in a few of the more important policy issues in education in the last two decades. One of these issues was the upgrading of teachers' academic and other training credentials. The decision was based on a goal — having teachers with more formal training — and on information — that many teachers had two years or less of postsecondary education. The changes in salary structures and in training programs which resulted have had a very large impact. Teacher training is now a four year process instead of being one or two years. The number of teachers with postsecondary degrees has risen very sharply.

Obviously information on teacher qualifications was central in the effort to create a better educated teaching force.

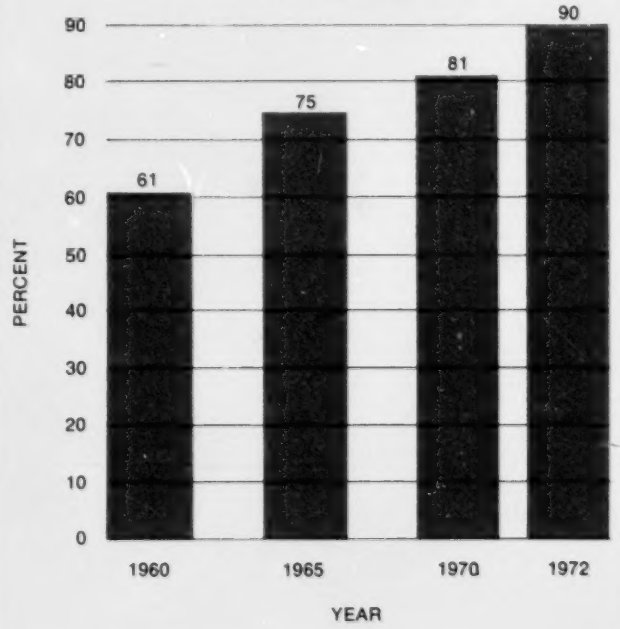
A second example, involving more sophisticated information, has to do with the economic returns from length of schooling. About 15 years ago evidence began to accumulate linking more years of education with higher incomes. As result of the evidence, new courses and programs were introduced for potential dropouts. More resources were devoted to counselling services. Students were alternately warned and urged to stay in school. The result has been a much higher rate of completion of secondary school.

TABLE 1
NUMBER AND PERCENT OF TEACHERS HOLDING DEGREES, MANITOBA

Year	Number of Teachers Holding Degrees	Percent of Teachers Holding Degrees
1963	492	8.4%
1970	4,888	40.5%
1973	6,243	57.1%
1976	8,426	68.0%

Source: 1963 — Based on Statistics Canada Report, 81-557
1970-76 — Education Data Services, Manitoba Department of Education

FIGURE 1
SECONDARY SCHOOL ENROLLMENT AS A PERCENTAGE OF 14 TO 17 YEAR OLDS, MANITOBA



Source: Statistics Canada, Report 81-229

The role of information can be illustrated also by looking at areas where it is or has been lacking, and the effect of its absence. One of these is the issue of the characteristics of students. There is little data about the background and abilities of students when they enter school. Testing for physical disorders such as sight and hearing problems is just beginning. It appears that many children have faced serious hardships in school because of sight or hearing problems which were not diagnosed. There is also little information about other factors contributing to children's readiness to learn. These factors include the child's familiarity with books and the family's attitude to education. (In place of information, sterotypes and prejudices exist about the school's neighbourhood, and, therefore, its children.) If better information were available, more effective school programs might result.

A final, very current example concerns the lack of data on student achievement. Schools may be making program changes without any real evidence that they will affect learning.

The Limitations of Information in Policy-Making

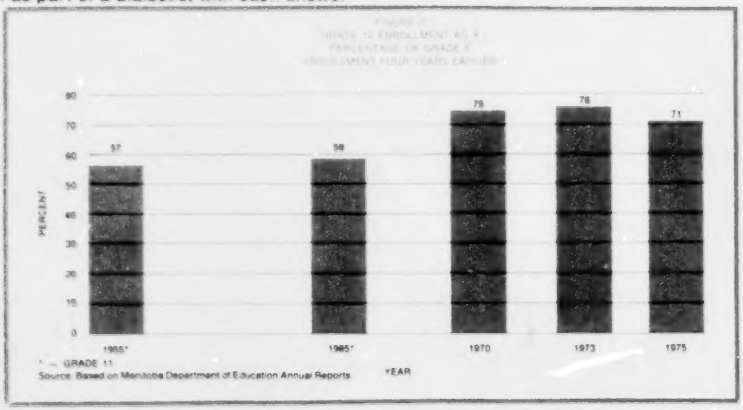
It should not be presumed from the preceding discussion that information is entirely neutral. Several factors cloud the question of what constitutes useful information. We may regard any educational issue as being like a crystal; its appearance is dependent on the angle from which it is viewed. Consider the issue of teachers' qualifications. One may equate improved qualifications with improved instruction. In that case the necessary information is on those qualifications. One might think about the effect of changes in qualifications on salaries and budgets, in which case dollars become important. Or one might question the relationship of formal qualifications to teaching ability, requiring information about student learning. It is not at all clear that one of the approaches is more valid, or of higher priority than the others. Each asks for different information.

Further the kind of information needed changes over time. Knowledge can be thought of as part of a dialectic, with each answer leading to a new question. Similarly, one view of a policy question leads to a decision, the consequences of which create a new question requiring further information. The knowledge that education can be considered a productive investment led to research which suggests that the payoffs from education are influenced largely by socioeconomic factors. A simple investment-return model is therefore misleading. This new conclusion is itself being questioned. The kind of information which is relevant changes as the nature of the question changes.

Information is always subject to interpretation. It may not be true that one can use statistics to prove anything (although Mark Twain divided untruths into "lies, damn lies, and statistics"), but people can and do disagree on the meaning of specific data. What seems conclusive proof to one will be shoddy and misleading to another. In large part these disagreements are the result of the different values people use to interpret information. E. H. Carr referred to history as "a hard core of interpretation surrounded by a pulp of facts", meaning that one's perspective has a great deal to do with how one understands the evidence. The concept of value — what people think of as good or worthwhile — underlies schooling and education; any discussion of them is rooted in values.

People disagree about what is worthwhile. For this reason if for no other, information alone cannot guarantee good decisions. As well, the way in which decisions are made is important. Policy-making, it appears, is not the rational process which some textbooks describe. It is influenced by a multitude of factors, from political pressures to overheated meeting rooms. It is quite possible, with all the information imaginable, to make a poor decision. (In fact, too much data may be as bad as too little, since it becomes impossible to sort out what is relevant from what is not.)

Despite all these cautions, information is still essential for good decisions. It is a link to the sensory world, without which one is merely guessing. And, as will become clear, good information is not as available as might be hoped.



* — GRADE 11
Source: Based on Manitoba Department of Education Annual Reports

Part II — Data We Have And Data We Don't

This chapter is a discussion of information about various elements of education. The list is arbitrary, but it captures the major aspects of the system. Each section includes comments on data currently available and suggestions about information which is relevant but unavailable. Some suggestions about improvements have been made, but the report does not try to construct an overall, detailed approach to information collection, as is made clear in Part III.

The attempt to determine what data are available about education in Manitoba is difficult, for several reasons.

First, there are few central sources for information. Isolated effort is the rule, with various individuals and organizations pursuing their own direction. Most school divisions do not have much organized data; the various branches of the Department of Education also collect information independently. An exhaustive search would require checking with every school and every educational organization in Manitoba — a very time consuming task.

Much of the information that is collected is of questionable validity. Poorly designed questionnaires, inadequate samples, and faulty analyses are not uncommon. Data from one year are sometimes not in a form which allows comparison with previous years. Worse, some data are collected but not analyzed, or analyzed but not reported. University theses with useful information lie unread. Reports are not disseminated to those who might be interested. More than a few reports and surveys are lost or otherwise unavailable. Complaints about having to fill out forms and never hearing the results are common.

In the preparation of this report a number of schools and school divisions, most provincial organizations, and most branches of the Department of Education were contacted. Relevant publications were studied, and suggestions from respondents about other information sources were pursued. While there may be specific pieces of data omitted, the general picture is accurate.

The fourteen sections are as follows:

A. RESOURCES:
   - Students
   - Teachers
   - Facilities
   - Money
   - Support Services
   - Materials

B. PROCESSES:
   - Curriculum
   - School-community Interaction
   - Authority and Decision-making
   - Research
   - Classroom Practices

C. RESULTS
   - Achievement
   - Economic
   - Social

A. RESOURCES

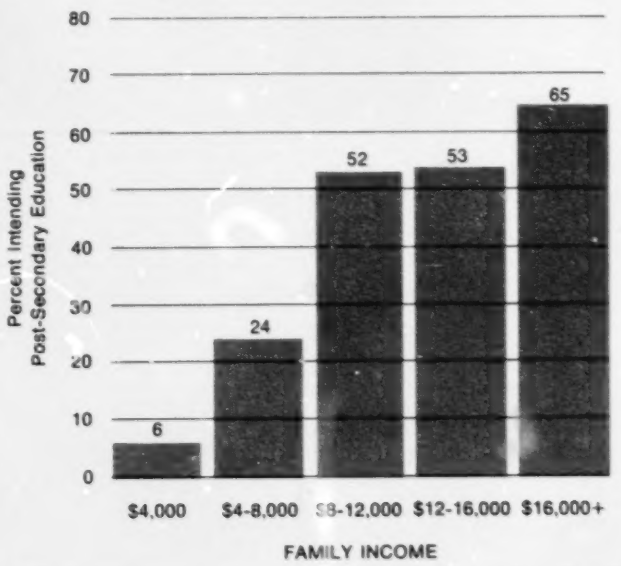
1. Students

Student background is a key factor in educational attainment. The relationship between students' early environment and their school achievement is strong; it may be the most powerful factor of all. Consequently judgments about equal opportunity in education and the role of schools in allowing social mobility must rest on information linking student characteristics with eventual achievement. Have we been able in the past decade to reduce the disparities in the education of urban and rural, or rich and poor children? Do school programs recognize and attempt to meet the needs of the different types of communities they serve?

Data on gross enrollments exist, of course, there are also a few sources of more helpful data. The 1971 census results have been broken down by school division, giving information about income levels, occupation, family size and parental education. Some schools have been able to use census data to determine the characteristics of their own neighbourhood. Special census reports also provide some useful information on students, such as reading habits.

We do know how many students finish high school, and how many go on to university, although in most cases this is gross data which does not compare, say, the percent of immigrant children finishing high school with the proportion of native-born students who do so. Very little is known about dropout rates. There is little data about student transfers from shool to school.

FIGURE 3
INTENTION OF GRADE 11 STUDENTS TO ATTEND POST-SECONDARY EDUCATION BY FAMILY INCOME, MANITOBA, 1976



Source: Survey, Manitoba Youth Secretariat, Department of Continuing Education and Manpower.

There is a limit to the information about individuals which can be demanded without violating privacy. It is important, however, to have some information which would allow judgments to be made about the relative effects of school on various kinds of students. This information includes socioeconomic status of families, first language, family size, and exposure to preschool programs. It is possible to gather such data in a way which preserves confidentiality of individuals.

Finally, it is important to have information on children with special needs, such as physical handicaps, or perceptual problems. This data is at present available only haphazardly, although the screening programs now under way will provide better data on sight and hearing problems. The special needs census being conducted jointly by Metro school divisions may alleviate this lack in Winnipeg.

2. Teachers

Of the various elements of school program, including curricula materials and facilities, teachers are the most important. They are in contact with students, they determine the actual school program, and their salaries take most of the educational budget. Information about teachers is important in addressing many significant issues. What are the implications — financial and programmatic — of a young teaching force in a period of declining enrollments and low teacher turnover? How do various characteristics of teachers affect teaching ability with different children? What sorts of professional development programs are likely to be most useful? What is the relationship between formal education and perceived teaching success?

The Teacher File of the Department of Education collects information from every teacher yearly on education, age, sex, salary, subjects taught, experience, mobility and workload. The data are computerized for easy retrieval, meaning that questions regarding these elements can be answered readily.

Although it is not entirely comprehensive, the Teacher File is an example of how useful data can be made accessible at a modest cost.

TABLE 2
SALARY AND EXPERIENCE OF MALE AND FEMALE PRINCIPALS
MANITOBA, 1970 and 1976

		Male	Female
1970	Number of principals	596	179
	Mean years experiences	14.9	17.2
	Mean Salary	$12,000	$9,200
	Percent of all teachers	13.1%	2.4%
1976	Number of principals	557	98
	Mean years experience	16.7	17.2
	Mean Salary	$21,500	$17,000
	Percent of all teachers	9.9%	1.4%

Source: Education Data Services, Manitoba Department of Education

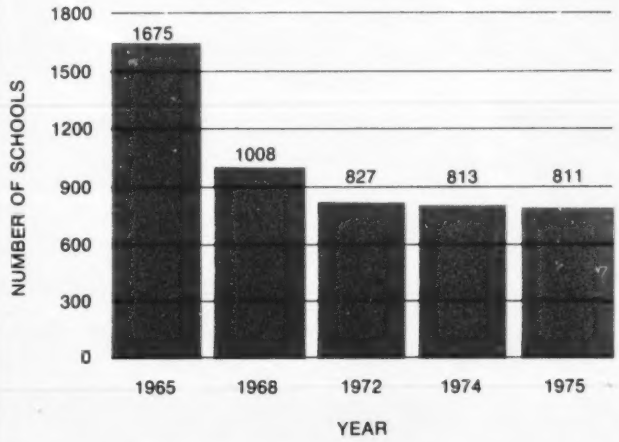
3. Facilities

Buildings are one of the most visible aspects of education. While enrollments were rocketing in the 1960's, however, the number of schools was declining because of consolidation.

Currently one problem is matching school space with enrollments. Older schools have extra space due to declining enrollments, while new schools are being built in new subdivisions. In 1976 the Province spent about $18,000,000 on major school construction projects while total student enrollment declined.

A second issue concerns facilities within buildings. The kinds of facilities considered basic have become more elaborate. What used to be luxuries are now essentials. Most elementary schools now have gymnasia, for example, and school libraries have been improving. There is still, however, great variance among schools in facilities such as science labs, music rooms, art areas, and so on.

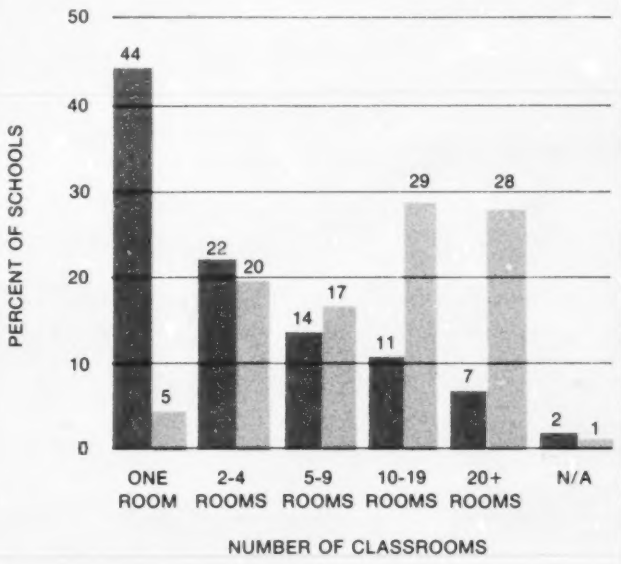
FIGURE 4
NUMBER OF SCHOOL BUILDINGS,
MANITOBA



Source: Statistics Canada, Report 81-229

Most information on building and facilities is presently not in usable form. The Department of Education has records of buildings constructed or renovated since 1959, and conducts a survey annually of school buildings' capacity and enrollment. However, much of this data is not tabulated, so, for example, the age and capacity ranges of schools is unknown. There is only limited information about how facilities relate to programs. The School Library, Physical Education and Vocational branches of the Department have some information on facilities in their respective areas, although it is not always readily available. For some aspects of buildings — such as the prevalence of open area elementary schools, or the number of school theatres — no information is available.

FIGURE 5
PERCENT OF SCHOOLS BY NUMBER OF CLASSROOMS, MANITOBA, 1965 and 1970



COLUMNS — 1965
1970

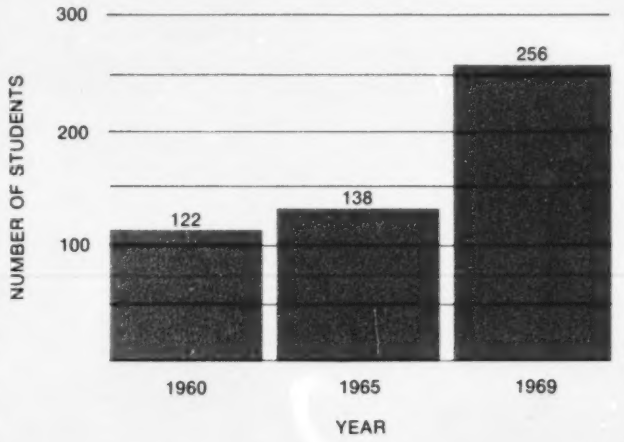
Source: Statistics Canada, Report 81-229

TABLE 3
MANITOBA SCHOOL LIBRARY DATA, 1972

Number of schools	728
Number with central school library	412
Average library space per pupil	3.6 square feet
Average expenditure on materials per pupil	$5.40
Average number of books per pupil	9.9

Source: Statistics Canada, Report 81-001 (January, 1974)

FIGURE 6
AVERAGE SCHOOL SIZE
MANITOBA



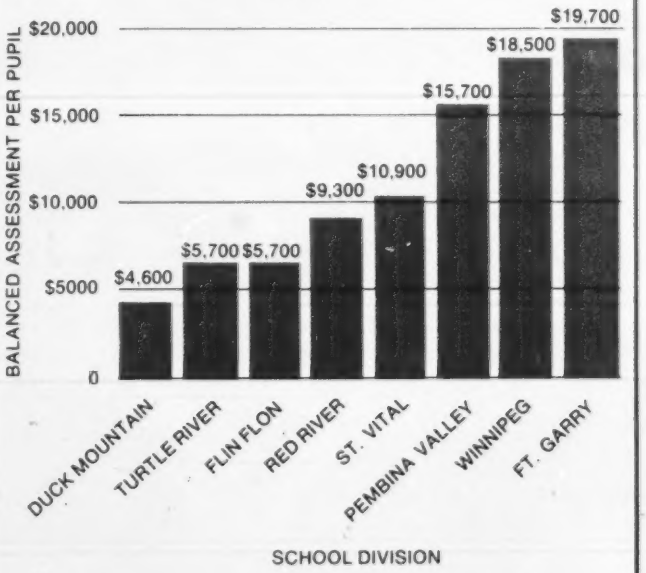
Source: Statistics Canada, Report 81-229

4. Money

The debate over the financing of education is never-ending. In recent years attention has been focussed on inequalities in local ability to raise money, and on special needs requiring extra expenditure, such as small rural schools or inner city schools.

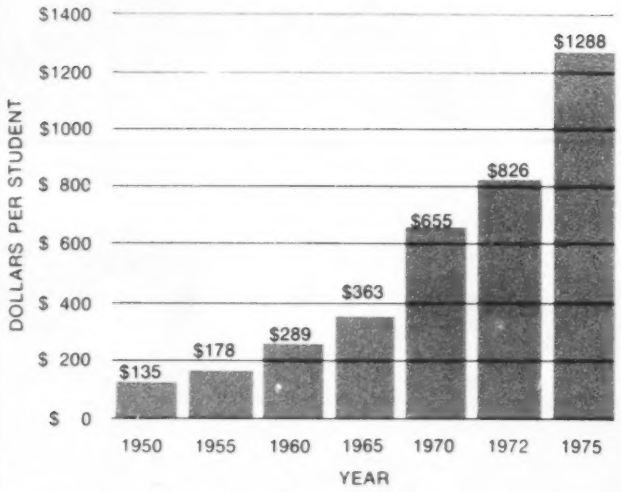
The issue of equitable financing of schools has been explored extensively. The annual cost study of the Manitoba Association of School Trustees (MAST) the Finance Study of the Manitoba Teachers' Society (MTS), and the work of the Minister's Advisory Committee on Education Finance contain ample information on gross costs and particularly on revenue. The data indicate that there are large differences in revenue and expenditure per pupil among school division.

FIGURE 7
BALANCED ASSESSMENT PER PUPIL OF
SELECTED SCHOOL DIVISIONS,
MANITOBA, 1976



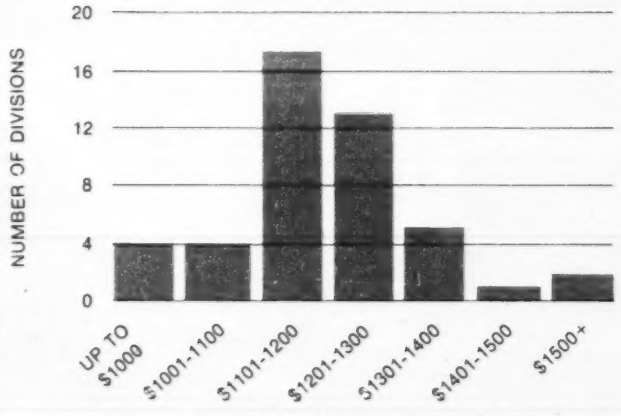
Source: Manitoba Association of School Trustees Cost Study, 1976.

FIGURE 10
AVERAGE PER PUPIL EXPENDITURE BY
MANITOBA SCHOOL DIVISIONS



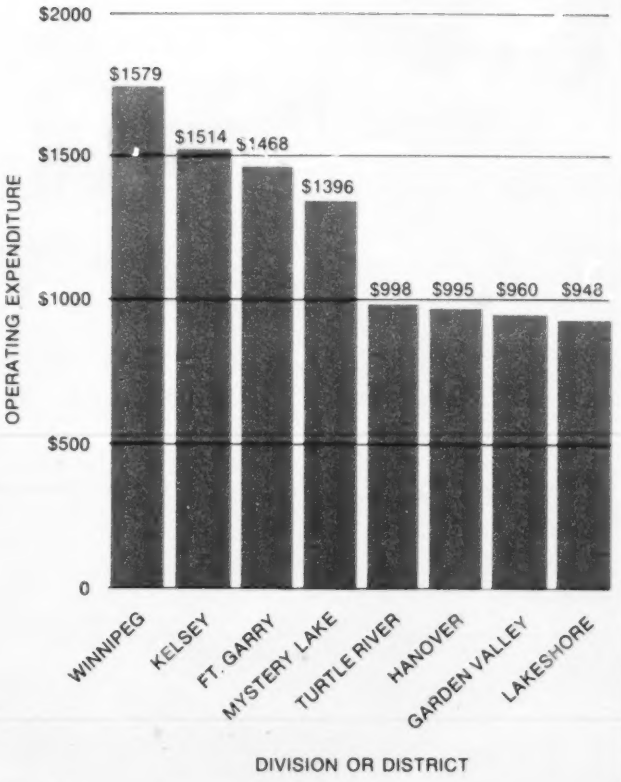
Source: Statistics Canada, Report 81-208

FIGURE 9
NUMBER OF SCHOOL DIVISIONS BY PER
PUPIL OPERATING EXPENDITURE,
MANITOBA, 1976



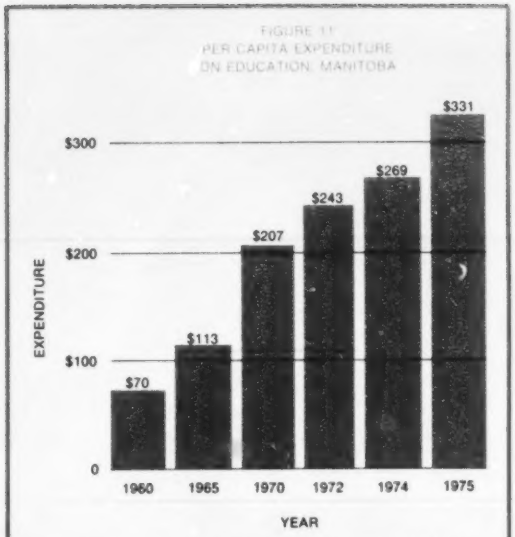
Source: Manitoba Association of School Trustees Cost Study, 1976

FIGURE 10
OPERATING EXPENDITURE PER PUPIL
OF SELECTED MANITOBA SCHOOL
DIVISIONS, 1976



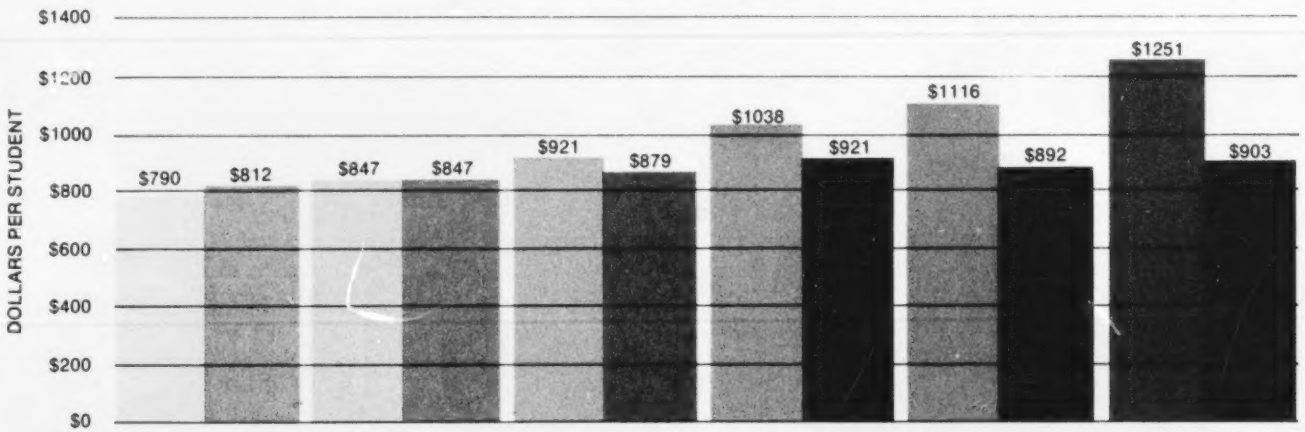
Source: Manitoba Association of School Trustees Cost Study

The relative importance of educational spending by governments is also known. Although expenditures on schooling have risen dramatically since 1970, most of this increase is the result of inflation; the change in real dollars has been quite small. Nonetheless, expenditures on education do make up a larger portion of the gross national product than in most developed countries.



Source: Based on Statistics Canada Reports 81-208, 81-250, 91-201.

FIGURE 18
EXPENDITURES PER STUDENT, CANADA, ACTUAL AND DEFLATED BY CONSUMER PRICE INDEX (1971=100)



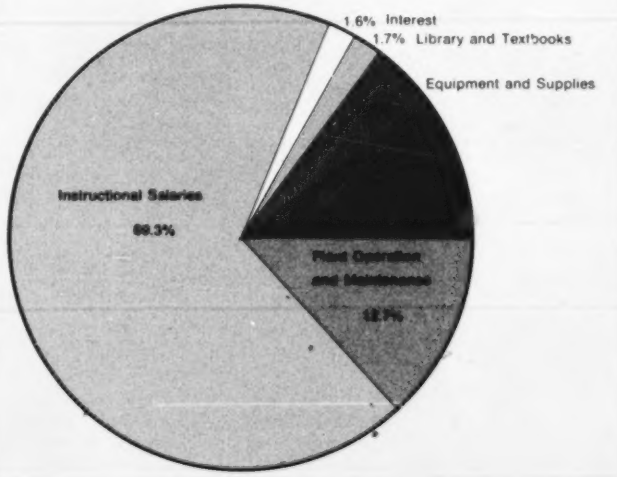
Source: Statistics Canada Report 81-250.

The question of how the money for schools is actually spent is not as clear. School division budgets break down expenditures by general budgeting areas. However, the categories are not specific enough to be very meaningful. Well over half of all expenditures fall in a single category: salaries and benefits, regular instruction. There are also some differences in the way divisions allocate costs to categories, although common approaches are gradually being developed.

Since the real cost of specific aspects of schooling — such as a physical education program — are not known, it is difficult for schools to know how their resources are best used. While program budgeting attempts have not been very successful in Manitoba, there is need for some way to make better associations between dollars and programs. Given the current situation of restricted budgets this is an area needing immediate attention through a joint effort by school divisions and the Department of Education.

PROGRAM BUDGETING — A method of assigning school costs, including salaries, to program categories in order to calculate the real cost of programs.

FIGURE 13
COMPOSITE SCHOOL DIVISION BUDGET: MANITOBA, 1976



Source: Based on Manitoba Association of School Trustees Cost Study

5. Program Support Services

School support services — including special educational programs and facilities, subject area consultants, professional development and other related areas — have become increasingly important, but there is no regular information about them. The Department of Education has traditionally been the chief provider of support services, but exactly what services the Department makes available to schools has not been as clear as it might, especially given the reorganization of the Department over the last few years. The Department's teacher information bank has information on certified personnel involved in school support services, although this data has not been retrieved and analyzed.

The 1975 Survey of Special Services, done by the Manitoba Working Group on Children With Special Needs, provides a good picture of available services for physically handicapped, mentally handicapped, emotionally disturbed, and learning disabled students. Services provided centrally and in each school division or district are detailed for each group. The Survey is an example of how data on a topic of particular concern can be collected and presented effectively.

6. Materials

In the last few years increasing attention has been paid to the materials (such as books, audio-visuals or kits) available in schools. Much of the concern has centred around such issues as Canadian content or sex bias. In both these areas some serious weaknesses have been found.

Other questions about materials also arise. Are materials at the appropriate level of reading difficulty for their intended audience? Are materials suited to students' developmental level? Are materials reasonably easy for teachers to use? Are they readily available? Who chooses materials?

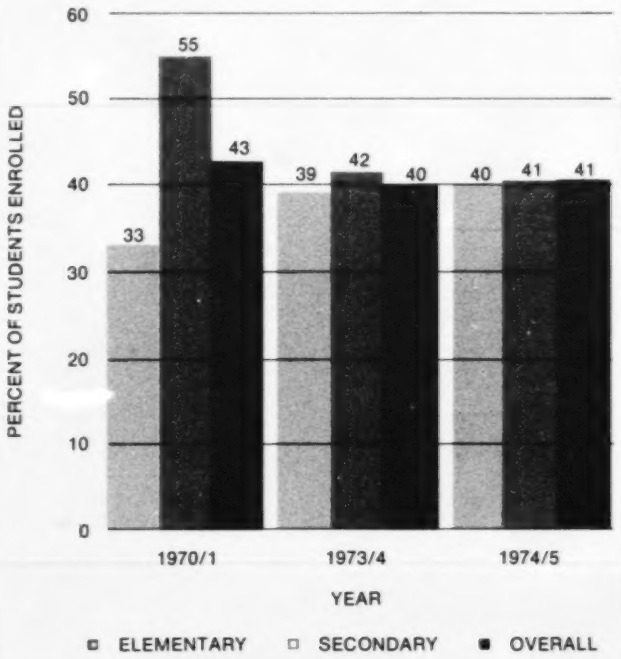
These are not issues of the highest priority for policy makers, but they do deserve some attention.

TABLE 4
CONTENT CHARACTERISTICS OF APPROVED LITERATURE TEXTBOOKS
MANITOBA, 1975

	Grade 1	Grade 5	Grade 12
Percent of Material from Canadian Sources	51%	9%	22%
Ratio of Male to Female Central Characters	3:1	9:1	4:1

Source: Canadian Literature Research Project, Planning and Research Branch, Manitoba Department of Education.

FIGURE 14
PERCENT OF STUDENTS ENROLLED IN FRENCH AS A SECOND LANGUAGE PROGRAMS, MANITOBA



Source: Statistics Canada Report 81-001, Sept. 1975

1. Curriculum

Not so long ago curriculum was cut and dried. Courses, textbooks and even the speed with which material was to be covered were laid down by the Department of Education. Those days are gone, replaced by a concern for individualized learning and the decentralization of curriculum. Schools have moved from a single approach prescribed for all students to many approaches determined — supposedly — by schools and school divisions.

Despite the change on paper, who in fact determines curriculum is uncertain. Schools, school divisions and the Department of Education are all involved. There is therefore uncertainty about what is actually being taught. Out of the vast array of knowledge, what are we including in the schools' curricula? What areas receive most emphasis? How much attention is being given to career education, for example? What is the place of Canadian Studies, both as a subject of its own and as a part of other subjects? Is more or less time being devoted to mathematics, or English, or science? Within various subject areas what is being emphasized? Are there significant differences among schools in the content taught?

Secondary Schools

The only data readily available on secondary school curricula are enrollment figures for various courses, compiled by the Department of Education. These are useful, since they allow judgments about changing student choices — for example the decline in French enrollments. The Department also keeps a registry of School Initiated Courses (SIC) and Student Initiated Projects (SIP), although it may not be complete. No information is available on the actual content of various courses or the relative emphases given by different teachers.

TABLE 5
STUDENT INITIATED PROJECTS (SIP)

	1974/5	1975/6
No. of SIP	200	292
% of students (X-XII) enrolled in SIP	.43%	.62%
% of schools with no SIP	?	32%
% of schools with 2 SIP or fewer	?	82%

Source: Special Projects Branch, Manitoba Department of Education

TABLE 6
SCHOOL INITIATED COURSES (SIC)

	1974/5	1975/6
No. of SIC	110	470
% of schools with no SIC	7%	38%
% of schools with 1 SIC	16%	33%

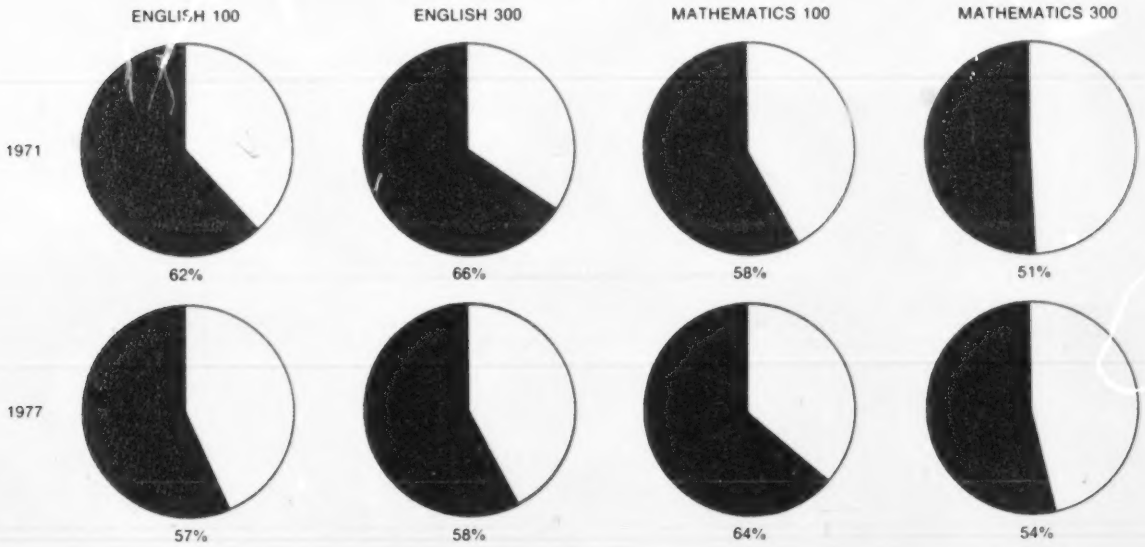
Source: Special Projects Branch, Manitoba Department of Education

Elementary Schools

The issues in elementary school are similar. However elementary school curriculum is not built around "courses", as subjects tend to be more integrated. The need again is for information on what is being taught and on how much time and emphasis are being given to various subject areas.

Better information does not depend on a more centralized curriculum, nor does this report argue for such a change. Rather, the need is to find out what is happening now.

FIGURE 15
PERCENT OF STUDENTS ENROLLED IN SELECTED 00 COURSE
MANITOBA, 1971 AND 1977



Source: Special Projects Branch, Department of Education.

2. School and Community

The relationship between school and community has often been uncertain. The full use of expensive school facilities for recreational and other purposes has been one concern. A more important issue has been the role of parents and other citizens in shaping school programs, either through the school board or through direct contact between parents and the school staff.

Although there has been a great deal of discussion about the importance of good school-community relations, what, if anything, has happened as a result is unclear. Community use of school facilities is quite well documented by school divisions and through efforts such as the Community Use of Schools study done by the Province in 1974. The areas of school-community involvement which need to be clarified include the role of community volunteers and local staff, school programs which involve community resources, and the community's role in school governance. Information on how many teachers live in the area in which they work, or how many volunteers schools are using, could easily be compiled. At present we do not know how many schools have some form of parent-teacher association. (Several years ago the then Minister of Youth and Education suggested strongly the advisability of parental advisory councils in schools.) While school board election results are well publicized, the extent of direct parental input to school programs is not known.

Public attitudes to school have been explored, but much of the surveying suffers from poorly constructed or biased questions. The presumed widespread public dissatisfaction with schooling might diminish if questions focussed on the respondents' own schools rather than the whole system. The Department of Education's Grade IV Survey produced exactly that result, although it, too, can be criticized for poor questions.

TABLE 7
PERCENTAGE OF SCHOOL TRUSTEE ELECTIONS BY ACCLAMATION, MANITOBA

Year	Percent
1971	70%
1972	65%
1973	65%
1974	60%
1975	62%

Source: Data compiled by Manitoba Association of School Trustees.

3. Patterns of Authority and Decision-making

The pattern of authority in public education has changed greatly in the last few years. As has been noted the Department of Education, once the prescriber of curricula and the inspector of schools and teachers, now performs neither of these functions. More responsibility for developing programs rests with school divisions. Although the current Minister of Education has indicated that some form of Province-wide student evaluation program will be implemented, evaluation at the moment rests almost completely with local authorities.

There is little, however, in the way of systematic study of the effects of the transfer of powers. How various local authorities are responding to their new role is not clear. Nor is there systematic data on the role of teachers, students and parents in school programming. Who is being involved in decisions about schools? How do the various actors perceive their own and other groups' roles? How much responsibility is being taken by individual teachers and schools? How many areas are not working on local program development at all?

4. Research

Information on the extent and nature of education research in Manitoba is limited. The Manitoba Educational Research Council is gradually compiling an inventory of research reports and research personnel. The universities are the chief sources of research work, much of it done by graduate students. Often this work is too small-scale to be of very much use, and most of it is never disseminated to those who might use it. What is apparent is that research efforts in the province are sporadic and uncoordinated. For example, very few school divisions list research as a budget item. (An issue here may be the lack of a body which can respond to requests for small research projects). The Department of Education does not have a coordinated research program. Several branches are involved in research of one sort or another. The sharing of results tends to be haphazard.

A second aspect of research concerns the extent to which research findings are understood and applied by practitioners. Evidence from elsewhere suggests this is often a problem. If research is perceived as being of little use in practice then research efforts are wasted and are not going to be well funded. The degree to which research is used is a question very largely unexplored which could be investigated at modest cost. The Manitoba Educational Research Council intends to undertake further work on this issue.

5. Classroom Practices

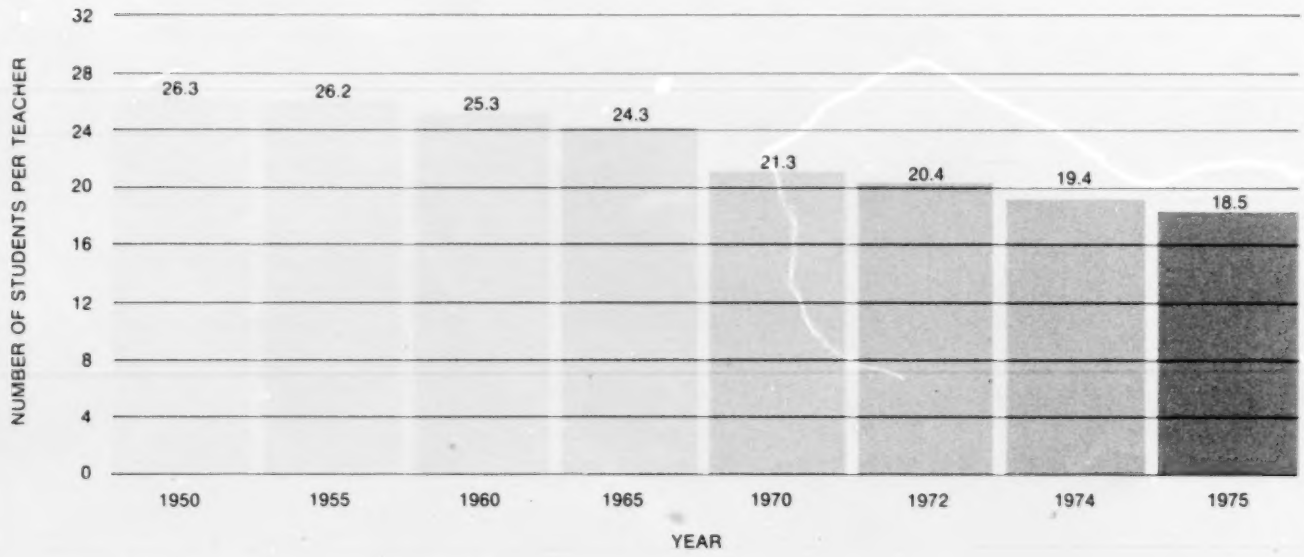
As more production-function (or input-output) studies of schools show few consistent effects of school resources on students, attention is shifting to the level of the individual classroom. If differences among schools characteristics are not significant overall it may be because the effects of many different classrooms nullify each other. It is becoming more evident that if instruction — and hence schooling — is to be improved we need to know more about what is happening in individual classrooms.

PRODUCTION-FUNCTION STUDIES — Studies which attempt to connect outputs of a system (such as, in the case of the school system, student achievement) with inputs (such as student IQ, class size, or teacher qualifications).

The fact is that information on what teachers and children are doing in school is very limited. The Manitoba Teachers' Society and the Department of Education have recently compiled some data on class sizes. However such questions as the prevalence of various teaching techniques, grouping practices, reading programs and grading plans is unknown. How many teachers are lecturing, and how often? How much time do students spend on reading or on science? How many schools group classes by ability? How much individual attention do students get? Do teachers alter their style in small classes? Are these significant differences in the treatment of disadvantaged children? We do not know very much about any of these questions.

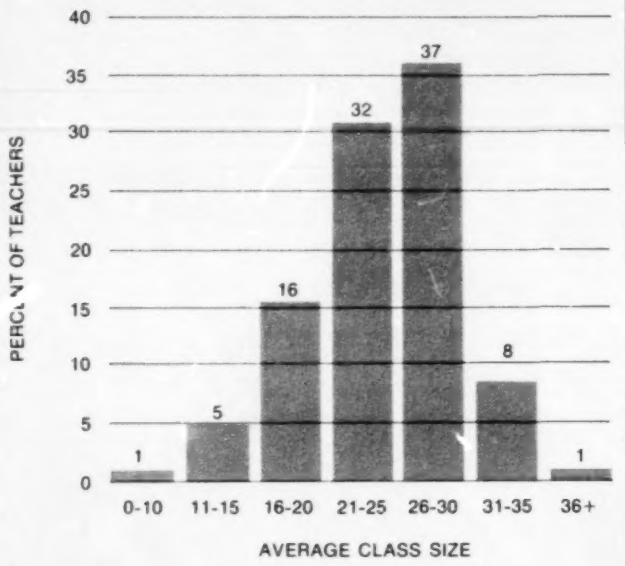
Undoubtedly answers to these questions are elusive; it is difficult and it may well be undesirable to quantify teacher or pupil behaviour. Nonetheless, decisions about the sorts of educational practices which are useful can only be made intelligently if we know what teachers are doing and how well it is working. A carefully designed British study in 1975 showed that, contrary to much opinion, only about ten percent of elementary teachers could be described as progressive in their teaching style. (That is, they had relatively unstructured classes centered around student interests.) This finding says a great deal about how teachers have been trained and about the impact existing school practices have on new teachers. The problem of creating planned change appears far more difficult than it was thought to be.

FIGURE 16
GROSS PUPIL-TEACHER RATIO
MANITOBA



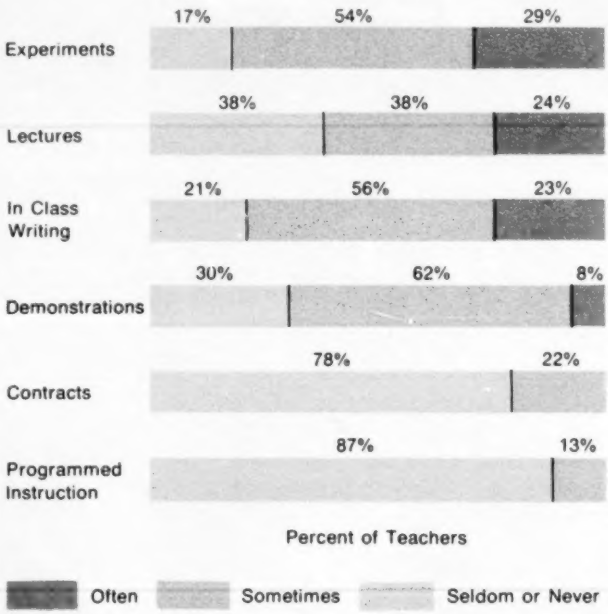
Source: Based on Department of Educational Annual Reports

FIGURE 17
AVERAGE CLASS SIZE, REGULAR CLASSROOM TEACHERS, MANITOBA, 1976



Source: Manitoba Teachers' Society Class Size Study

FIGURE 18
USE OF TEACHING METHODS BY SECONDARY SCIENCE TEACHERS, MANITOBA, 1975



Source: Based on H. Humby, M.Ed. Thesis, University of Manitoba, 1976.

What sort of information is needed? One might expect such data as:

- amount of time allocated to various subject areas
- breakdown of use of time (for example, group instruction, individual work)
- basic teaching approaches (for example phonics or sustained silent reading as approaches to teaching reading)
- teaching style
- grouping practices
- student attitudes to school
- classroom climate
- methods of assessing student progress

The point of all this, of course, is to learn more about how to improve instruction.

Collection of this data may seem to be a monumental task, but it need not be so. If careful sampling was used, and if only a few parts of the system, such as one grade or one subject area, were studied at a time, the undertaking becomes manageable. The effort could be in two parts: actual collection of data, and the development of methods which could be used locally for study. A year's work might include an analysis of activity in, say, primary grades, through a combination of surveys and observations, and the development of an instrument for local use, such as a measure of teacher attitudes. Over time useful information would be available provincially, and the spirit of inquiry at the school and school division level would be strengthened. The approach is practical and reasonable; some of the cautions necessary are described in the last section of this report.

C. Results

1. Student Achievement

No question is more central in education than that of what students are, in fact, learning. This is the heart of the enterprise of schooling. Recently students' knowledge, or lack of it, has been the centre of considerable controversy. Disagreement over what students ought to learn and how their learning is to be assessed make the controversy more difficult to settle.

What Is To Be Learned?

It is easy to agree that all students need to develop basic skills, but not so easy to know precisely what skills are basic. Beginning with communication skills, including reading and writing, there is an immediate question about how good these skills need to be. Should students be able to read well enough to understand scholarly journals, or just the newspaper? Must students be able to write analytical essays, or is the ability to write a coherent letter sufficient? Is it reasonable to expect all, or even most students to be able to read at advanced levels, to write with style, or to develop sophisticated analytical skills? These are not questions with self-evident answers.

Most schools — and the Department of Education — include much more than reading and writing as goals of education. Knowing how to learn — being able to do research and use reference material — is considered important. Other knowledge — in subjects such as mathematics, science and history — is often considered important. Life skills, such as consumer education, use of leisure, or vocational abilities have a place. Increasing stress has also been placed on attitudes, both to education — such as a desire for continued learning — and to the rest of life — such as tolerance for others and feelings of self-worth. These affective goals rank high in parent and community opinion, including that of business people in Manitoba.

The expectations placed on schools have changed in the last ten years. If schools have changed to meet those new goals, then it is only reasonable to expect changes in the knowledge and attitudes of students.

Schools cannot achieve everything at once. The debate over student achievement is in part, then, a debate over which outcomes of schooling are most desirable. If one supposes, for instance, a choice between good spelling and creative writing, which should be stressed? If developing tolerance for others must come at the expense of a knowledge of Canadian history, which should be chosen? Opinion on these questions would probably vary widely.

At least in part the discussion of these goals involves the consideration of skills or knowledge which are essential, as opposed to being merely desirable. It might be agreed, for instance, that it is desirable for people to read literary classics or to understand algebra. Few, however, would consider these to be essential activities. Many of the announced goals of schools, it could be argued, do not fit in the "essential" category.

GOALS OF EDUCATION IN MANITOBA

The previous Minister of Education stated the goals of education in the Province as follows in an address to the Legislature:

1. To enable students to communicate effectively, communication being so defined as to include the skills of critical reading, writing, discussion and argument, note making, clear speaking and understanding of non-verbal information.

2. To develop competence in basic principles of arithmetic and an understanding of the basic principles of mathematics.

3. To encourage curiosity and critical and creative thinking.

4. To provide opportunity for students:

a) To express and exercise originality and imagination, and develop an aesthetic appreciation.

b) To develop civic, social and moral responsibility and judgment.

c) To develop knowledge and understanding of themselves, their fellow man, their environment, and the relationship among the three.

d) To develop an appreciation of the importance of cooperation among people and the necessary skills for cooperation.

e) To acquire life-long habits and attitudes that promote physical and intellectual development.

How is Learning to be Measured?

Even if agreement could be reached on the outcomes of schooling which were necessary or desirable, the problem of measurement would remain. It is important to distinguish between two uses — and possibly two kinds — of measurement; use by teachers to evaluate the progress of an individual student, and use to assess the overall level of students' skills and knowledge for policy-making purposes. Techniques suitable to the former purpose may be quite unsuitable for the latter, which is the concern of this report. For example, teacher-made classroom tests are very useful in helping teachers with individual students, but they do not provide much evidence of the overall state of student achievement.

In considering the various goals discussed earlier, the difficulties in measuring become evident. For those skills easiest to measure, such as elementary reading or arithmetic, the tools generally used are tests — either standardized or teacher set. The validity of the former has been criticized often, while the reliability of the latter is doubtful. In the case of other goals measurement becomes even more problematic. How does one measure an understanding of concepts, as opposed to the memorization of facts? Is there a way to discover what people remember, years later, of what the schools taught them? How is someone's love of learning assessed? The difficulties are such that no simple policy will provide satisfactory answers.

What Do We Know About Achievement?

Educational measurement in Manitoba for policy purposes is in a fledgling state. What we have is a smattering of data from a variety of sources, which does not form a coherent whole.

Teachers evaluate student progress regularly but much of this evaluation, as has been noted, is not useful for policy-making purposes. One piece of school data which is interesting (although it does not justify any hasty conclusions) is the apparent effect of the abolition of province-wide exams on pass rates.

The chief source of data on student achievement at present, however, is commercial standardized tests. A recent Department of Education survey indicated that most school divisions use such tests, with the Canadian Test of Basic Skills (CTBS), and the Metropolitan Achievement Test the most popular. The extent of use varies. In some cases individual schools give the tests and keep the results. In other instances a division may give a test to all students, but use the data only for school division purposes. Only a few divisions have extensive testing programs for divisional evaluative purposes. The Department of Education has attempted to derive provincial means from school divisions data, based on the Canadian Test of Basic Skills.

The Department's Field Services Branch (no longer in existence) conducted a series of standardized testing programs in various subjects and various regions between 1971 and 1975. These tests covered all parts of the Province and many grades and subjects. Several different tests were used. In general the results show Manitoba students at or above the norms for the test.

It is hard to see how these bits of data, taken as they are, yield very much useful information. Only a few skills of some students are included, and these are generally the easiest to measure rather than the most important. Little attention has been paid to attitudes and virtually none to the long-term results of schooling; hence the urgent need for better data about what students are learning.

VALIDITY AND RELIABILITY

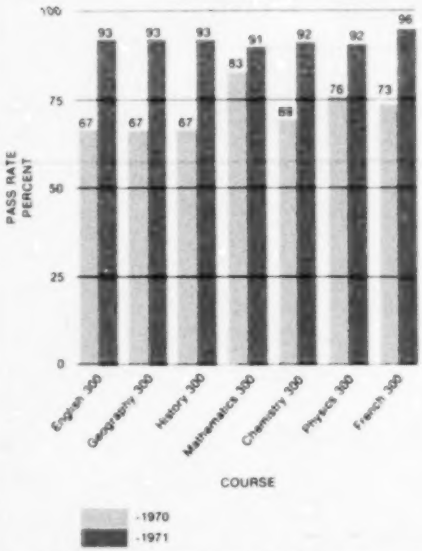
Discussion of ways of measuring student performance often centres around the concepts of reliability and validity.

RELIABILITY is the degree to which a test is consistent in its measurement. If an IQ test, say, is given to the same group twice with a week between, the scores should be very close to the same on both tests. Reliability ratings below .90 mean that there could be substantial change in a person's score from one administration of a test to the next.

VALIDITY is the degree to which a test measures what it purports to measure. For example, a test of basic arithmetic skills which contained only questions about decimals would have low validity. The validity of a test is often difficult to assess, especially when the test measures a concept, such as anxiety or self-concept.

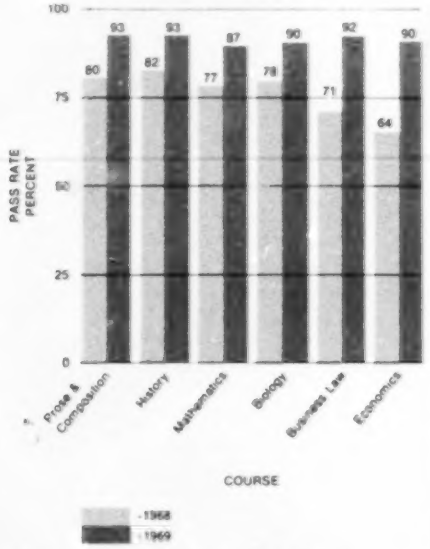
It is possible for a test to be highly reliable, but to have low validity. (This is the basis of the dispute over IQ test.) A test with low reliability is generally of very little use.

FIGURE 19
PERCENT OF STUDENTS PASSING
300 LEVEL SUBJECTS
MANITOBA: 1970 AND 1971



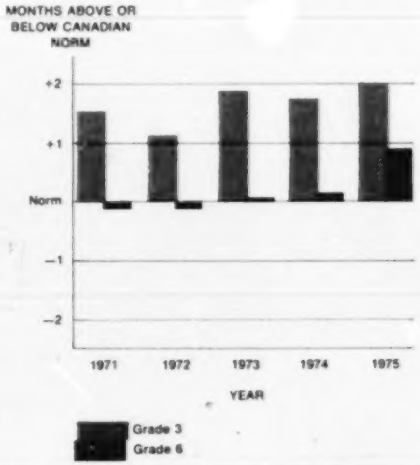
Source: Department of Education, Annual Report 1970, Bulletin xi/3, 1972

FIGURE 20
PERCENT OF STUDENTS PASSING
GENERAL COURSE SUBJECTS
MANITOBA: 1968 and 1969



Source: Department of Education, Annual Report, 1970

FIGURE 21
CANADIAN TEST OF BASIC SKILLS SCORES:
GRADE 3 & 6
RELATED TO GRADE LEVEL: MANITOBA COMPOSITE



Source: Evaluation, Research and Policy Analysis Branch, Manitoba Department of Education

A framework for data on achievement

It would be naive to expect this report to develop a perfect evaluation scheme; our intent is only to suggest a way of looking at the issues. In developing better information about what is being learned, it is important to match strategies to school's objectives. The inappropriate use of various testing devices will create problems instead of solving them. Given the complexity and variety of educational goals, it is clear that evaluation strategies will need to include diffuse, subjective measures as well as quantitative data.

We contend that only a few skills are essential for all students to learn. In our opinion the only school skills which every student must learn are fundamental abilities in reading, writing and computation. Schools must be responsible for teaching these skills to all students. We would argue that the level of "necessary" learning for all students lies somewhere in the elementary school range. We regard these skills as essential because they are the keys to further learning and because they are necessary for the economic and social survival of the individual. These skills can and should be measured regularly across Manitoba. Judgments can then be made about how many students and adults lacked minimum skills, and appropriate programs for upgrading could be planned.

There are also many other skills and attitudes which, while not absolutely essential, are highly desirable. These would include, for example, some knowledge about Canada, or an understanding of some basic concepts in science. The school may be limited in its ability to teach some things, such as analytical skills. Students may be limited in their ability to learn some things, such as, for example, in athletics. Some other areas, such as the development of moral values, are seen as being primarily the responsibility of other institutions.

To require the same learning for everyone beyond a fundamental level could have serious negative results. Such a requirement would ignore important differences: in what people are capable of doing, in what is useful to them, and in what they regard as important or worthwhile. It would impose a single path of learning on a greatly varied province. And there is appreciable evidence that it would not be successful.

For all these reasons we believe that most of the goals of schools should be decided locally rather than being imposed centrally. There might be considerable variety in such local decisions, but there is likely to be much uniformity also.

None of this should be taken to suggest that the measurement of student achievement is unnecessary. Rather, some different ways of judging achievement may be needed. The role of an evaluation system for policy purposes is to provide information about overall areas of strength and weakness in the population. To do this several different approaches may be useful.

NORM REFERENCED AND CRITERION REFERENCED TESTS

A NORMED test is one which compares any particular score with a set of average scores or norms for a group similar to that being tested. Norms are derived by testing large numbers of peoples and computing the average score for a given age or grade level. Subsequent scores are then matched to the established norms and given as grades or equivalents. A student's score on a reading test might be 6.0, meaning the level of a beginning sixth grader. Normed tests compare students, but they do not tell us exactly what skills a student has. Most IQ tests and reading tests are normed.

Two points should be noted about such tests.

(1) The tests are designed to differentiate among students. Thus each test will include a range of questions, from those which almost everybody is expected to answer correctly, to those which only few are expected to be able to answer. Thus, by design some questions will receive only a few correct responses.

(2) Norms are average scores. By definition about half those taking the test will be at or below the norm. One cannot logically speak of all students being at or above the norm or grade level any more than one can require everyone to be above average height.

A CRITERION REFERENCED test is one which reports a student's success in doing specific tasks or exercises, given a prescribed standard of achievement. For example, a test of addition for grade six with twenty-five questions might specify that twenty correct answers was satisfactory. Scores on criterion-referenced tests report how well a student can do particular tasks, but are not primarily designed to compare students with each other. Most teacher-set classroom tests are criterion-referenced.

Questions for criterion testing are determined by the skill being tested rather than the level of difficulty, so that most students could conceivably answer all the questions correctly. Scores are expressed absolutely rather than in terms of averages, so that it is possible for all students to be above the specified standard.

A move towards a comprehensive school testing program in most subjects, and beyond the elementary level does not seem wise. It is not hard to find out how many grade 10's can answer questions about density, for example, but it is more difficult to discover how many people can understand the concept, or how many will be able to solve the problems five years after leaving school. Since schools ought to be interested chiefly in the latter two abilities, tests can only be of limited use. The tendency, even in carefully designed projects such as the U.S. National Assessment of Educational Progress, is to measure knowledge of specific content and neglect learning skills. There is also the previously noted variation in teachers' interests and emphases to be considered. Is it desirable to have every teacher preparing all students to answer the same set of test questions? Does it make sense to have every student learn exactly the same material, regardless of ability or interest? Finally, it is important to remember that many factors outside the school influence what students learn. To judge teachers or schools on the basis of test scores or exam results is a very serious error.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)
A US program which attempts to measure adult and student knowledge in many areas — such as writing, science, or music — through carefully designed tests of population samples. Each subject area is tested every four years.

Instead of massive testing programs it makes more sense to try to define knowledge which is important — whether part of the formal curriculum or not — and assess the degree to which adults as well as students have such knowledge. Such surveys — based on samples — would be considered illustrative rather than being the sole basis of judgments about the school system. They could provide information on attitudes and knowledge without imposing a single set of values on all schools and all students. An example is the testing of physical fitness currently being conducted by the Department of Education. A similar model could be used for many subjects.

The measurement of attitudes presents perhaps the most difficult problem. There is increasing evidence that attitudes are important influences on learning. Changes in self-concept, for example, as measured by tests, do affect achievement. Measurement of attitudes is potentially useful, but not easy. Serious problems exist with most of the standardized tests available for this purpose; problems which do not seem likely to disappear soon. To put it simply, it is hard to know when an attitude has been measured because attitudes are only names for vague sorts of feelings and behaviour. One must therefore, interpret the results of attitudinal testing very carefully.

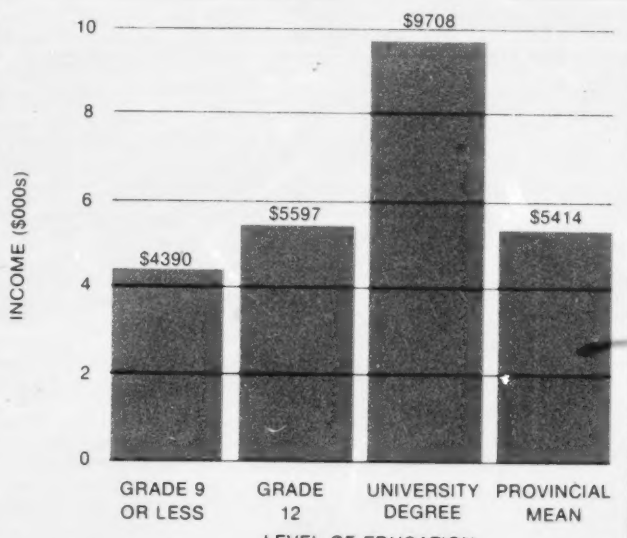
No comprehensive proposal for an evaluation system is being made here. Nor are the considerable problems of implementation addressed. Clearly there are no short cuts or easy answers. We do suggest that the factors outlined above need to be considered carefully in developing any data system for policy purposes.

2. Economic Outcomes

Schooling has been seen as the route to a better job and a higher income. Many studies showed that higher income and more years of schooling were related. Census data shows that this is so in Manitoba.

The relationship between schooling and income led to the effort to provide more education for more people; and effort which still continues through such programs as mature student entry, adult upgrading, GED (high school equivalency) tests, and various outreach programs. The result of efforts to keep people in school has been, not surprisingly, a rapid increase in the level of education of the population.

FIGURE 22
MEDIAN INCOME OF MALE WORKERS BY LEVEL OF EDUCATION, MANITOBA 1970



Source: Based on Statistics Canada, Report 94-763.

However some of the consequences of higher levels of education have been unanticipated. Differences in peoples' incomes have not diminished as a result. Well educated young people are having increasing difficulty finding appropriate work. Unskilled workers also have difficulty as the qualifications necessary for employment rise. Jobs which once required grade 8 now demand grade 12, even though the extra years may have no effect on a worker's ability to do the job.

Several policy questions arise from these trends. Are people with more education better workers? Is more schooling still a good investment in terms of eventual salary? Should students be encouraged to stay in school longer? Are current vocational training programs in schools useful?

These are very difficult questions even to try to answer. They are national or international in scope. However a start could be made by looking at some of the relationships in our own province between schooling and jobs. The Post Secondary Research Reference Committee in Manitoba is beginning this task. It makes sense for the public schools also to begin to ask what happens to students after they leave the system. Follow up studies of students, and samples of the educational background of various occupational groups could provide information on the ways in which schooling affects careers.

TABLE 8
RELATIONSHIP OF EDUCATION TO EMPLOYMENT
CANADA, 1970

Level of Education	% of Labour Force	% of Unemployment
Less than complete elementary school	12%	26%
Less than complete secondary school	49%	55%
Complete secondary or better	39%	19%

Source: Statistics Canada, Report 71-520

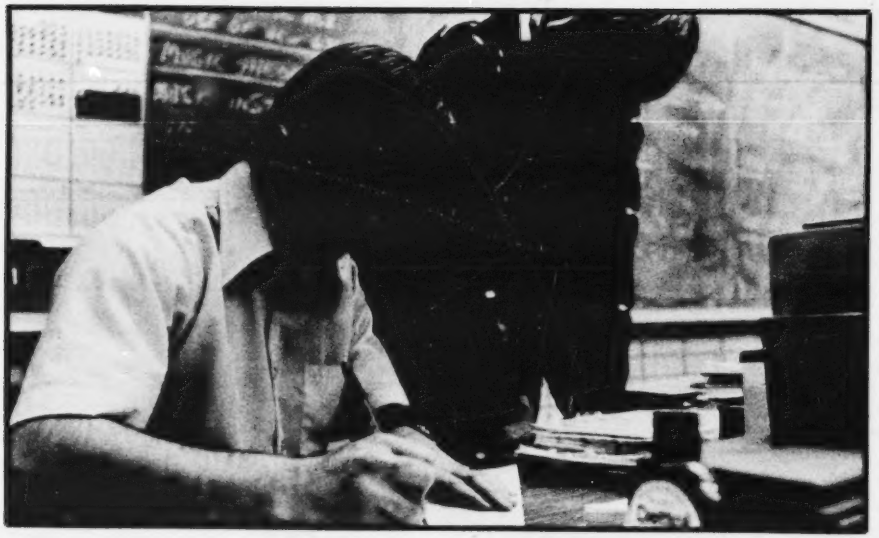
3. Social Outcomes

While the relationship between schooling and earnings has been studied intensively, less attention has been given by educators to many other, non-economic goals of schools. These include:

- Citizenship: Are more educated people more knowledgeable about public affairs? Do they vote more often? Are they more likely to be criminals?
- Leisure: Are people with more education more able to use leisure time constructively? Do they need more? Are they more involved in continuing their education?
- Attitudes: Is more schooling associated with more tolerance and understanding others?
- Use of Social services: What is the relationship between education and unemployment? Social services? Use of health services? Housing?

If we are to continue to list social outcomes as goals of education it would be useful to begin to ask how successful we are. Research on these questions exists, chiefly in the United States. It may be reasonable to assume that many of the results of such research are valid here. Thus the effort directed to answering these questions in this Province may be minor even though the questions themselves are important.

The assessment of relationships between education and behaviour can never be definitive. Some questions will always remain. But to avoid the questions is to admit that there is no way to judge the success of some of the most significant aspects of schooling.



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Part III — What Is To Be Done

Some Cautions

The preceding discussion presents a varied picture of the state of information on education. The data available on various aspects of the system varies from comprehensive to non-existent. If one theme predominates it is that much basic information is lacking.

Before any comments on possible improvements are made, several qualifications need to be made. The first point to be noted is that the world ought not to be run for the convenience of computer programmers. It is important to remember that efforts to get better information about education are not the purpose of the school system; they are an adjunct activity. When the compilation of statistical data, the filling out of forms, or any other kind of research begins to interfere with the job of the schools, then it is time to call a halt. It is also important to protect privacy — including that of the students — in any research or study.

In any case, no matter how much time was spent collecting data about school and education, many questions would remain and new ones would arise. Education, like any complex social process, is unknowable in a final sense. Only a nodding acquaintance, as it were, with various aspects of what is going on is possible. It would be well to have all efforts to gather more and better information pervaded by a sense of humility in the face of the fantastic complexity and ever-changing variety of human activity.

This being said, several principles can be stated which should infuse all efforts in information-gathering:

1. Utility for decision making. Data should have some connection to policy concerns. There is no point having great amounts of data in which nobody is or ever will be interested.
2. Efficiency in collection.
   a) Teachers and schools should not be burdened with many requests for data. Coordination of data-gathering is very important if the sources — teachers, students, principals and others — are not to be so overloaded as to become hostile. (Such hostility has already been created in some cases.)
   b) Data should be collected at the level most able to handle the task. Some kinds of information lend themselves to central collection — most commonly standard information collected on a regular basis. Other kinds or data, not as easy to collect through standard forms, can be best gathered by schools or school divisions.
3. Accessibility. There is no use having data in uncollated form stored in boxes in a musty cellar or sitting in individual schools files (as is now the case with many records). Information in a form which does not allow responses to requests within a short time is for all practical purposes useless.
4. Cooperation. There should be general agreement on the need for and the method of collecting data. If collection and use of data are to be effective there must be commitment by all parties to the effort. Although such a collaboration effort, involving as it does many groups and organizations, may be time-consuming, there is no real alternatives. Unilateral action has led to duplication, to resistance from those asked to provide information, and to results which are fragmented, too narrow, or biased. Given that resources available for information collection are likely to be limited, a coordinated approach is essential.

Examples do exist of programs which meet most or all of these criteria.

- The Departments' Teacher File provides useful data which is retrievable (although a shortage of programmers sometimes creates lags in actual production). The File is altered periodically as its users see new data needs. Last year the File responded to more than a thousand requests for data.
- The MAST Cost Study makes basic financial data available. The existence of such annual studies for comparative purpose is also useful.
- The MERC Research Inventory provides a listing of research and researchers in Manitoba. The sources listed have indicated that many requests for materials or services have been received.
- The Rural Education studies done by the Faculty of Education of University of Manitoba and the Manitoba Department of Education made some useful information available at low cost.

Do We Need An Information System?

It would be easy for a report such as this to call for the establishment of a single comprehensive data-gathering agency. We see some serious difficulties with such a proposal.

First, there is some question about the extent to which information would be used if available. Unless the sort of shared commitment discussed above is present, data will not be used no matter how sophisticated the system which collects and distributes it. The building of commitment requires an ongoing evaluation of information needs, not a single, predetermined package.

Secondly, our capacity to address many issues at the same time is limited. If it is granted that serious attention can only be given to a few major educational issues at a time, it seems reasonable to limit our efforts to acquire information accordingly.

Many different types of data may also eventually be seen as needed. Some questions will require complete annual statistics (such as the current Teacher File, or information on budgets). In other areas information collected periodically would suffice (for example, information on facilities, or demographic information). Flexibility in approach is very important and can best be guaranteed by not building an ongoing commitment to a single agency.

None of this should be read as meaning that the current situation with regard to information on schools is satisfactory. It is not. The need for better information is great and insistent. What we advocate instead of a single agency is agreement on a process for defining issues which require better data, and for acting to gather the required information. A set of linkages seems more appropriate than an institution.

Linking Action With Information Needs

The approach which the Manitoba Educational Research Council proposes arises from the principles and qualifications cited earlier in this chapter. We believe that, while an effort is needed, it should be moderate.

We recommend:

1. That the various interested parties — including the Department of Education, teachers, trustees, school divisions, post-secondary institutions, students, and various publics — meet to consider the issues arising from this report.
2. That the meetings attempt to identify information which is needed and presently unavailable. Information needed could be classified as baseline data as necessary on a continuing basis, or as special data needed only periodically to address specific concerns.
3. That the meeting work towards an agreement on priorities for information gathering and dissemination. (The Council believes that better information on classroom practices and on student achievement are the outstanding needs.)
4. That, for areas designed as priorities, the meetings work towards agreement on a cooperative approach to data collection. Such an approach could involve several organizations undertaking aspects of a single project or organizations acting separately. Rationalization, not control and centralization, should be the aim.
5. That the meetings discuss ways in which data collected can be disseminated with maximum effect.

We feel that such an approach combines maximum cooperation and flexibility with a minimum need for resources, and does not infringe on the autonomy of existing organizations. Effort can be designed to meet agreed-upon objectives, and the objectives can be matched to available resources. The interests of particular groups could be pursued, but some focus for collective effort would be provided. As has been noted, Manitoba has been able to operate such cooperative ventures successfully before. They have been shown to increase commitment and to have greater impact than have isolated efforts. The Council believes that such an approach can, over a period of years, provide the province as a whole with relevant information at a reasonable cost, and have a positive impact on the quality of education.

NOTES

To Accompany Tables and Graphics

Page	Item	Comment
5	Table 1	Figures for 1963 derived from Statistics Canada data. Degrees may mean any university degree.
6	Figure 2	For 1955 and 1965 comparison is between grades 8 and 11 because of different matriculation standards.
9	Figure 3	Based on a stratified sample of 3246 grade eleven students. Income figures are those reported by students.
11	Table 3	Provincial school library staff have some concerns about the accuracy of this data.
14	Figure 15	Calculated by dividing total expenditure into population and rounding to nearest dollar.
15	Figure 13	Instructional salaries include those of teachers and principals, but not those of maintenance staff. Equipment and supplies are those used for instructional purposes.
17	Figure 15	Based on a special study of school enrollments conducted by the Special Projects Branch. Percent refers to percent of students in grade.
17	Tables 5, 6	Based on a survey of schools conducted annually by the Special Projects Branch of the Department of Education.
19	Figure 16	Calculated by dividing total enrollment by total number of teachers. Does not refer to actual size of classes.
20	Figure 17	Based on data contained in the Teacher File of the Department of Education.
20	Figure 18	Based on data for secondary schools in H. Humby, **A Study of the Present State of Science Instruction.** M. Ed. Thesis, University of Manitoba, 1976.
23	Figure 19, 20	The increase in pass rates had not reduced the utility of high school grades in predicitng post-secondary achievement.
23	Figure 21	These averages were calculated by the Evaluation, Research and Policy Analysis Branch of the Department of Education based on reports of scores from school divisions. The index is not weighted by enrollment.

Photographs

Page	Source
3, 11, 27	**Province of Manitoba Photographs.**
7	**Department of Education Information Services.**

To Accompany the Text

Page	Column	Paragraph	Comment
4	2	1	Citation: Coleman, James. **Equality of Educational Opportunity.** Washington, D.C.: Government Printing Office, 1966. Other studies on the same subject: Jencks, C. **Inequality.** N.Y.: Basic Books, 1972. Averach, H. **How Effective is Schooling?** Santa Monica: Rand Corporation, 1972. Henderson, V. et. al. **Peer Group Effects and Educational Production Functions.** Ottawa: Economic Council of Canada, 1976.
5	1	1	For a basic view of policy-making see Coleman, P. **Policy Making at the School Board Level.** Winnipeg: MAST, 1972.
5	1	3	The complexity of school goals is illustrated in Bloom. **A Taxonomy of Educational Objectives.** Boston: Longman's, 1956.
6	2	2	Citation: Carr, E. H. **What is History?** N.Y.: Macmillan, 1961.
6	2	3	See for example: Allison, G. **Essence of Decision.** Boston: Little, Brown, 1971.
9	1	2	1971 census data by school division are held by Data Services Branch, Department of Education. For other census data contact Statistics Canada.
10	1	2	The Teacher File is administered by the Data Services Branch, Department of Education.
10	2	2	The figure of $18,000,000 was provided by the staff at the Administrative Support Services Branch, Department of Education. This branch also houses the construction records referred to on page 11.
12	1	2	See **A Study of Education Finance in Manitoba.** MTS, 1975; **Report of the Minister's Advisory Committee on School Finance;** Winnipeg, 1976; Coleman, **Educational Opportunity in Manitoba,** Manitoba Association of School Trustees, N.D.
15	2	2	Citation: **Survey of Special Services Associated With the Manitoba School System.** Paper of the Inter-Departmental Working Group on the Education of Children and Youth With Special Needs, Province of Manitoba. August, 1975.
16	2	1	Enrollment records are the responsibility of the Teacher Certification and Records Branch, Department of Education. The information of SIP and SIC is compiled by the Special Projects Branch of the Department.

Page	Column	Paragraph	Comment
18	1	2	Citation: **A Study of the Community Use of Schools.** Rural Region Working Group. Province of Manitoba. July, 1974. See also reports of the school divisions (e.g. Seven Oaks School Division reports on community schools).
18	1	3	Citation: **What do Parents Think?** Planning and Research Branch, Manitoba Department of Education, 1975.
19	1	1	See the first listing in this section for readings.
19	1	2	Citation: **A Report on Class Size in Manitoba Schools;** (Draft). Manitoba Teachers' Society, 1977.
19	2	2	Citation: Bennett, Neville. **Teaching Style and Pupil Progress.** Cambridge, Mass.: Harvard University Press, 1975.
21	2	1	Information on the public ranking of the goals of schools comes from studies which are part of the internal/external evaluation program of the Evaluation, Research and Policy Analysis Branch; Department of Education. Of course reactions to such surveys depend on the way the questions are phrased.
22	2	3	The survey of division testing practices was conducted by the Evaluation, Research and Policy Analysis Branch of the Department of Education.
22	2	4	The tests conducted by the Field Services Branch have not been made public due to prior agreements with participating school divisions.
25	1	2	The Physical Education Branch of the Department of Education is to release results of its fitness testing program shortly.
26	1	3	The Post Secondary Research Reference Committee is made up of representatives of Manitoba's universities and colleges, the Provincial Government, and the Universities Grants Commission.
29	1	1	Citations: **Cost Study,** issued yearly by the Manitoba Association of School Trustees. **Research Inventory,** published by the Manitoba Educational Research Council **Education in Rural Manitoba,** six reports published jointly by the Faculty of Education, University of Manitoba, and the Manitoba Department of Education.

List of Documents Cited in This Report

STATISTICS CANADA

71-520 Facts About The Unemployed
81-001 Educational Service Bulletin
81-208 Survey of Education Finance
81-229 Education in Canada, 1960-1970
81-250 Elementary and Secondary Education — Financial Statistics
81-561 Socio-cultural Characteristics of Students, 1971
94-763 Income By Age and Schooling
Many other reports were also consulted.

PROVINCE OF MANITOBA

Department of Education

1971 Census Data by School Division. 11 volumes. Data Services Branch.
What Do Parents Think? Planning and Research Branch, 1975.
Student Initiated Projects and School Initiated Courses: Final Evaluation Report, 1975-76. Special Projects Branch. 1976.
Annual Report. 1970-71 to 1975-76.
Bulletin. XI/3. November, 1972.
Canadian Literature Project. Special Projects Branch. N.D.
Canadian Test of Basic Skills. Evaluation, Research and Policy Analysis Branch. N.D.

Other

General Survey of High School Students. Youth Secretariat. Department of Continuing Education and Manpower. N.D.
Survey of Specialized Services Associated With the Manitoba School System. Inter-departmental Working Group on the Education of Children With Special Needs. August, 1975.
Community Use of Schools. Rural Region Working Group. 1974.

OTHER

Community School Reports. Seven Oaks School Division. Periodic.
A Study of Education Finance in Manitoba. Manitoba Teachers' Society. 1975.
Cost Study. Manitoba Association of School Trustees. Annual.
Report to Hon. I. Turnbull From Advisory Committee on Education Finance. October, 1976.
Humby, H. **A Study of the Present State of Science Instruction in Manitoba.** M. Ed. Thesis, University of Manitoba. 1976.
Report on Class Size. Manitoba Teachers' Society. 1977.

Rural Education Reports, Department of Educational Administration, Faculty of Education, University of Manitoba, 1976.
No. 1 Determinants of Educational Expenditures in Manitoba School Divisions.
No. 2 Changes in the Teaching Force, 1970-1974.
No. 3 An Analysis of Student Busing.
No. 4 A Study of Outcomes of Education in Rural Manitoba.
No. 5 Education in Rural Manitoba: What Future?
No. 6 Educational Alternatives for Rural Manitoba.

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